

CLAIMS:

1. Separator having a vertical axis of rotation (D) and a drum (21) with solids discharge openings in a single-cone or double-cone centrifugal space in which a disc stack consisting of a plurality of superimposed, preferably conical discs (1) is arranged, which have bores (2,8,9) which in a cooperating manner form at least one channel (3,6,7) in the disc stack, and having a distributor (22) with a distributor shaft (16) concentrically surrounding a drum axis (11) and a lower base section (25) which expands radially and in which one or more distributor channels (14) are distributed in the form of bores, characterized in that the diameter of the at least one channel (3,6,7) inside the disc stack above the disc which is the lowest in the flow direction is not constant and/or in that the at least one channel (3,6,7) is arranged to be sloped with respect to the axis of rotation of the drum, and in that the bores of the at least one distributor channel (14) are not radially oriented with respect to the drum axis (11) in the drum (21).

2. Separator according to Claim 1, characterized in that the bores forming the distributor channels (14) are oriented relative to the radial line (R) through the axis (D) of the drum (21) in a laggingly sloped manner in a radially interior bore section against the rotating direction of the drum (21).

3. Separator according to one of the preceding claims, characterized in that the distributor channels (14) in a further bore section lead into the drum (21), which bore section is oriented upward in the drum and leads out directly below a rising channel of the disc stack into the drum (21).

4. Separator according to one of the preceding claims, characterized in that the angle (β) between the distributor channel (14) and the pertaining radial line (R) at the starting area of the distributor channel (10), at its inner circumference, is between 15 and 85°, particularly between 25° and 65°.

5. Separator according to one of the preceding claims, characterized in that the distributor channels have an expanding or a slot-type outlet (15) which extends tangentially in or against the rotating direction of the drum (21) and/or is oriented in the upward direction in the drum (21).

6. Separator according to one of the preceding claims, characterized in that the geometry of the bores of the discs (11) of a rising channel varies in the channel such that, during the operation, the gaps between the discs are uniformly charged with liquid over the entire height of the disc stack.

7. Separator according to one of the preceding claims, characterized by a piston valve for opening and closing the solids discharge openings.

8. Separator according to one of the preceding claims, characterized in that the diameter of the channel (3,6,7) changes in steps at a distance of several discs (1).

9. Separator according to one of the preceding claims, characterized in that the diameter of the channel (3,6,7) changes continuously from one disc (1) to the next (1).

10. Separator according to one of the preceding claims, characterized in that the diameter of the channel (3,6,7) decreases in the flow direction.

11. Separator according to one of the preceding claims, characterized in that the geometry of the bores (2,8,9) of the channel (3,6,7) changes from one disc to the next.

12. Separator according to one of the preceding claims, characterized in that the bores (2,8,9) have a polygonal shape.

13. Separator according to one of the preceding claims, characterized in that the bores (2,8,9) have a round shape.

14. Separator according to one of the preceding claims, characterized in that the bores (2,8,9) have a curved shape.

15. Separator according to one of the preceding claims, characterized in that each channel (3,6,7) consists of several bores (2,8,9).

16. Separator according to one of the preceding claims, characterized in that the bores (2,8,9) of each channel (3,6,7) form a perforated pattern in the discs (1).

17. Separator according to one of the preceding claims, characterized in that the at least one channel (3,6,7) is oriented to be sloped with respect to the drum axis (A).

18. Separator according to one of the preceding claims, characterized in that the at least one channel (3,6,7) extends in a curved manner in the disc stack.

19. Separator according to one of the preceding claims, characterized in that the at least one channel (groove 20,2,8,9) is oriented asymmetrically with respect to the bisecting line (W) of its assigned disc segment (19).

20. Separator according to one of the preceding claims, characterized in that the at least one channel (groove 20,3,6,7) is oriented to be laterally offset with respect to the bisecting line (W) of its assigned disc segment (19) which is bounded by webs (17) and/or lugs (18).

21. Separator according to one of the preceding claims or according to the preamble of Claim 1, characterized in that the discs are placed on radial webs of the distributor shaft (16), the discharge channel (8) in the disc stack or a groove (20) in the distributor shaft (16) for the discharge being oriented asymmetrically with respect to the bisecting line (W) of each disc segment (19).

22. Separator according to one of the preceding claims, characterized in that the at least one channel is a rising channel (3) for feeding the product into the disc stack.

23. Separator according to one of the preceding claims, characterized in that the at least one channel is a discharge channel (6,7) for discharging a liquid phase from the disc stack.

24. Separator according to one of the preceding claims, characterized in that, in each case, one of the discharge channels (6, 7) for discharging various liquid phases is constructed close to the inner circumference (I) or close to the outer circumference of the disc stack inside the disc stack.